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Established 1835

Railway & Commercial Gazette

Vol. CCXXXIX No. 6106

LONDON, AUGUST 29, 1962

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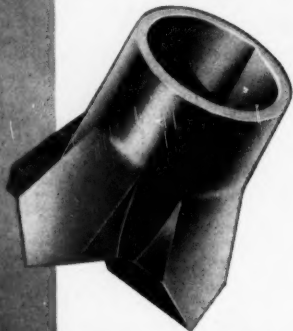
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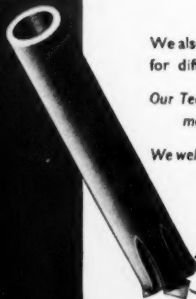
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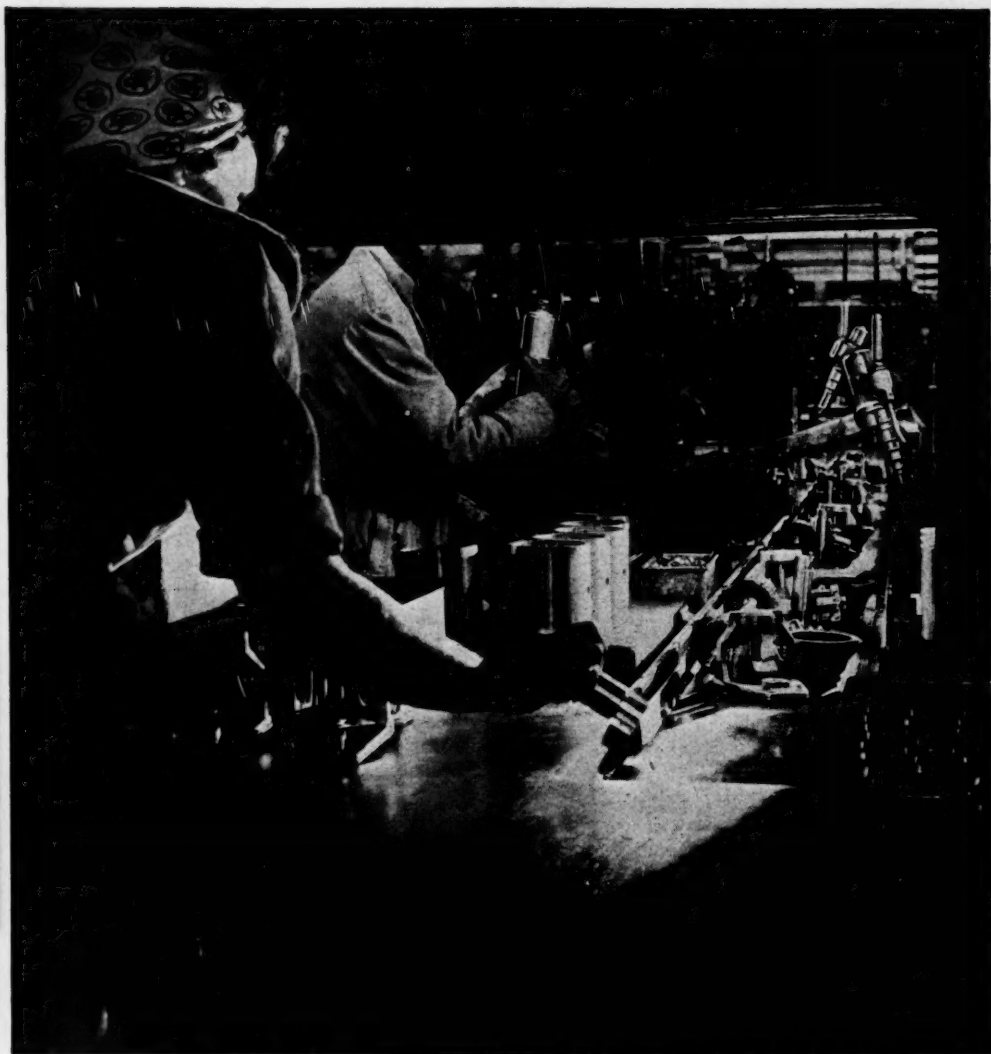
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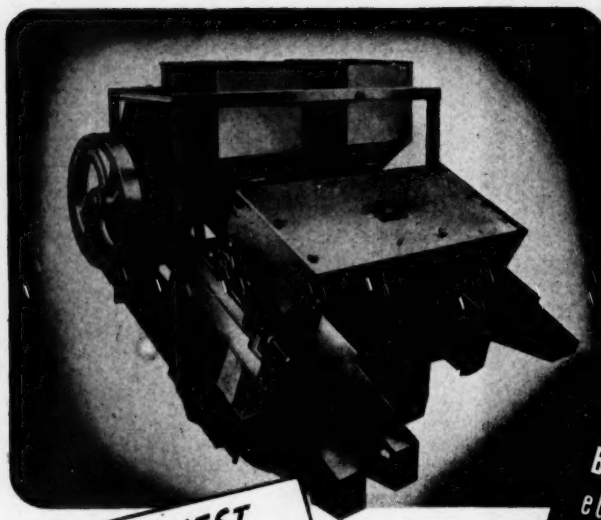


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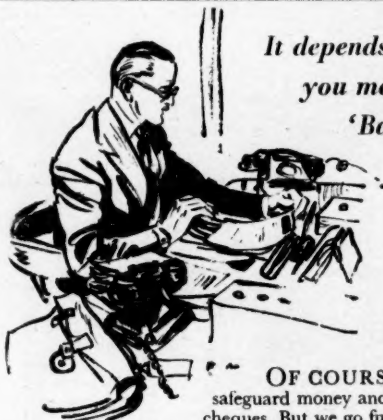
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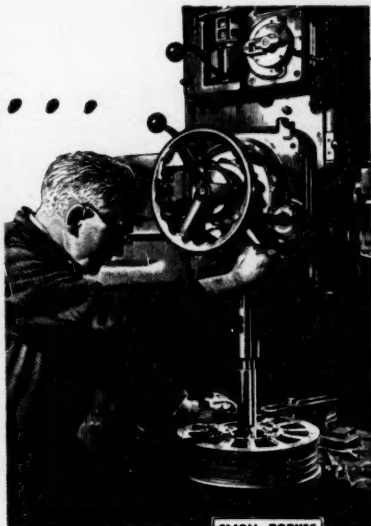


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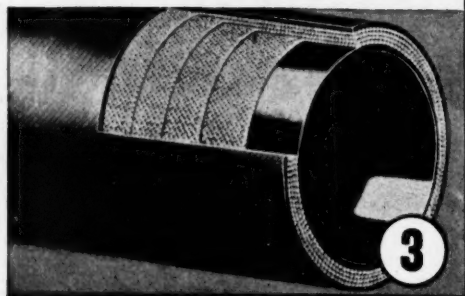
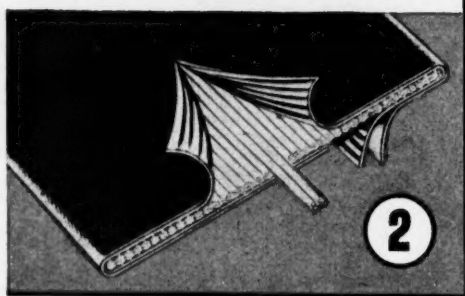
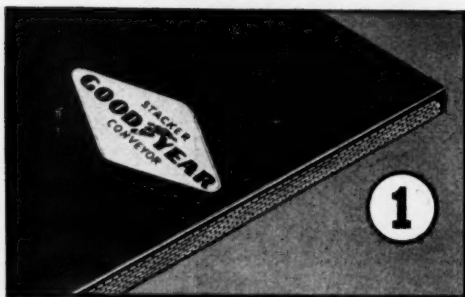
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## NOTES AND COMMENTS

### Dissonant Voices on Lead

The sombre tone of the Paley Commission's report on lead confirms the general impression that has been voiced by *The Mining Journal* over a good many years regarding the lead outlook. Historically speaking, lead has been a low price metal for a lengthy period and partly for this reason has been conventionally regarded as indispensable for many uses. Estimates of future reserves have tended to be coloured by this standpoint and were prices to show a big increase over the next 25 years the possibility exists that estimates of reserves would grow more rapidly than in the case of other metals which have been viewed on a higher price plane. Mixed lead and zinc ores are considered likely to furnish larger reserves for lead production than the straight lead ores though here any big increase in silver prices might enlarge the importance of argentiferous lead deposits.

No allowance is possible for the extent to which a major rise in lead prices over the next quarter of a century, which the Report describes as probable, may affect the assumed rate of increase in consumption which is necessarily based on previous experience and might well effect over so long a period the ability of consumption to absorb a major increase in price. The Report assumes that in many cases substitution has already done its work but it may be wondered whether an impoverished world has the ability to absorb a progressive major price increase and what its reaction will be to the continued use of what by long association it has grown to regard as an essentially cheap metal.

The report has already evoked criticism in the United States and the Lead Industries Association has issued a pamphlet in which it states that "there is little to fear about future availability of lead, apart from temporary economic or political conditions or the imposition of artificial controls . . ." The Association's statement says that figures of reserves must be used with the greatest caution or they may be dangerously misleading. It concludes, though inevitably without any detailed study as far as the pamphlet is concerned, that known world reserves of lead in ore may be estimated in the neighbourhood of 50,000,000 tons, and the statement argues that as reserves

of lead contained in ore increased by some 500,000 tons or eight per cent between 1944 and 1950 pessimistic deductions as to the future are dangerous. The final conclusion is that "the long term outlook for lead in the United States is encouraging."

This very sharp contradiction to the tenor of the Paley Report may be due in part to that Committee's projection of the problem being for a longer term than that covered by the Lead Association's objective of reassurance to United States consumers. Further criticisms will probably be forthcoming in due course from various quarters, but as things stand to-day it seems difficult to controvert the general conclusion of the Paley Committee that on the basis of their assumption of a more or less regular increase in United States' business advance over the next quarter of a century, lead is probably of all the major metals the one in which future supplies are likely to be least expensive.

Anyway, the Committee's report should do much to encourage prospecting for lead and promote the undertaking of new enterprises.

### A New Company in Uganda

The news that a new company, to be known as The Tororo Exploration Co. Ltd., has been formed in Uganda was made known on August 14. The company was born of agreements reached between the Rio Tinto Co. Ltd., Monsanto Chemicals Ltd., Frobisher Ltd. of Canada, and the Uganda Development Corporation Ltd., and the step follows investigations made during the last two years by the Uganda Government and its various consultants. Indeed, prospecting, proving and the laboratory examinations of deposits have hitherto been performed by the Government and on its behalf by overseas research organizations for this period, and only recently was responsibility for the operations transferred to the U.D.C.

Initially, Tororo Exploration will explore the mineral deposits surrounding the Sukulu Hill near Tororo in greater detail than has previously been accomplished, and will investigate by means of a pilot plant the problems of ore dressing and separation which are likely to present difficulties. The Sukulu mineral complex includes deposits of niobium, phosphates and magnetite, which are reported

to be present in satisfactory quantities within the complex. Should the initial task of the new company be successfully concluded, it is announced that a mining company will be formed by the same signatories to obtain a full mining lease to begin large scale exploitation.

Details of the agreement reveal that the Governor has undertaken to grant Tororo Exploration a special exclusive prospecting licence for pyrochlore, magnetite, apatite, francalite, baddleyite and zircon. The four signatories have agreed that should a mining company ultimately be formed, the Uganda Government will be given free shares to the value of the research work it has done. This is at present being computed. The Uganda Development Corporation will have the first option to purchase these shares from the Government. The new company will meet all further research expenditure. The participating companies are interested individually in obtaining concentrates from the eventual mining company in order to form processing companies on their own account.

So far as the technicalities of the project are concerned, it is stated that adequate power will be available when the Owen Falls hydro-electric plant begins operations to make possible the electric smelting of high phosphorus iron ores. In addition to these benefits, plans for the manufacture of sulphuric acid at the Kilembe copper mine by late 1954 are under consideration. The Kilembe mine is now under development on the Ruwenzori Mountain, and the railway extension under construction is expected to reach there by the end of the same year. Rio Tinto and Frobisher are jointly participating in the Kilembe Scheme and a year ago the property had an estimated ore reserve excess of 14,000,000 tons averaging 1.98 per cent copper and 0.154 per cent cobalt.

These developments constitute an important and progressive step for Uganda, and it is the hope of the Protectorate Government that the niobium, phosphates and magnetite of the Sukulu complex will be extracted and separated to ensure the establishment of industry producing phosphorus, superphosphates, fertilizers, and at a later stage, iron and steel products.

#### **Newfoundland—A Challenge to British Inventiveness and Courage**

The formation of a new British company, made up of a number of existing companies, to develop the resources of Newfoundland, and more particularly of Labrador, was suggested by Mr. Joseph Smallwood, Prime Minister of Newfoundland, when he addressed a meeting in London recently, arranged by the Federation of British Industries, of firms and associations likely to be interested in such developments.

The actual development of the resources believed to exist in Labrador, he said, must necessarily be preceded by a prospective or exploratory period. Among the minerals known to exist there were vast quantities of iron ore, together with manganese, and also, there was every reason to suppose, titanium, copper, lead and zinc. There were unlimited quantities of high-grade timber, and a greater hydro-electric potential than was at present developed in all Canada.

Mr. Smallwood estimated that if a new British company were formed to explore and develop the natural resources of Labrador, a capital of £2,000,000 would be needed. By using British personnel and equipment, including British aircraft for the preliminary aerial survey, a relatively small part of the £2,000,000 would have to be converted into dollars. Development, as distinct from prospecting, would have no time limit set to it, and the cost of development might be anything from \$20,000,000 to \$100,000,000.

Mr. Smallwood described how, in the preparations for the development of the vast iron ore deposits in the west

of Labrador, the building of the 365-mile railway to it had to be carried out by aerial survey and by flying in the necessary construction equipment. This year 19,000 tons of equipment had been flown in; bulldozers were packed in small parts and welded together on the spot.

In Newfoundland, he said, the population of 375,000 was growing as rapidly as in any other province of Canada. At present, twelve companies, mostly American, were engaged in prospecting and taken together, they employed more men than had been employed during the whole of the past 50 years. Most of the prospecting was for minerals, including nickel, copper, zinc and lead but drilling for oil was in progress on the west coast.

Gold production figures also have eased slightly during the first quarter of 1952 with 94,571 troy oz. (for an average of 31,524 troy oz.) as compared with 96,543 troy oz. or a monthly average of 32,181 troy oz. Copper production fell off very sharply with only 9,733 tons produced as compared with the 16,083 ton production for the first quarter of last year. Lead production also was unchanged with production of 55,586 tons as compared with 55,587 tons last year.

Production of zinc improved to a total of 48,055 tons as compared with 36,672 tons in three months last year. Drop in zinc and lead prices in the United States earlier this year caused Mexican mines to ship most of their production to Europe where there was considerable demand for some time at price levels above those fixed in the U.S. However, the recent import duty policy changes promulgated by the United States have once again made it profitable for the mines to ship the bulk of their exports to the United States.

## **Mexico**

(From A Correspondent)

Acapulco, August 23

With Mexico's mining industry facing a series of problems involving high production costs, unsettled international market conditions and lack of adequate transportation, figures for the first quarter's production have registered a decrease in gold and copper operations, with only silver and zinc showing gains.

Mining companies in Mexico are still patiently awaiting promised government action to reduce production costs, and this includes mines with heavy American investments. However, indications are that despite official denials, mines will also have to contend with a boost in railroad freight rates.

Only silver production continues to withstand the irregular international market conditions, and this is due chiefly to the fact that the federal Bank of Mexico absorbs all national production when silver prices drop to unfavourable levels in world markets. Production figures for this precious metal show a total of 11,290,000 troy oz. for the first three months of this year, with monthly production averaging approximately 3,760,000 troy oz. as compared with the 3,620,000 monthly average of last year. Total 1951 production was 43,440,000 troy oz. which is quite considerably below the 60,000,000 to 70,000,000 troy oz. produced in pre-war years.

Silver protective policies of the United States and high production costs have been chief causes for recent production drops. Operation of low-grade mines has proved unprofitable while sales to the U.S. have also fallen off. That further drastic drops have not been made is due principally to the minting of new silver coins, and heavy purchases by the Bank of Mexico which has been exporting coined silver in sizeable quantities to Europe (especially Western Germany) and Saudi Arabia.

## Britain's Steel Problems

The first annual report of the operations of the Iron and Steel Corporation of Great Britain poses more problems than it solves. It is, of course, satisfactory to learn that this is one nationalized industry which has been able to show a modest profit on the first seven and a half months' operation. After an allowance of £13,405,253 for depreciation there remains a consolidated profit of £34,496,452. Fixed interest charges absorb nearly £7,000,000 and of the remainder £19,631,506 was required for taxation leaving £7,791,576 to be retained by the group.

No wonder that Sir John Green, the chairman of the Corporation, is perturbed. On the first stage of its development plan the industry has already spent £240,000,000 and proposes to spend a further £60,000,000 per annum during the next five years upon further capital re-equipment. Obviously, expenditures of such dimensions cannot be met out of revenues, even if the current profit margins could be maintained. But the fact is that more recently competitive conditions are developing in the steel trade. During the period under review which relates to the 7½ months trading, the profits of the State owned steel companies were swollen by high export prices obtainable in some markets for iron and steel products, and in addition substantial profits have come from other activities such as general engineering and structural engineering. The Corporation does not expect the same level of profitability when more normal trading conditions return and this return to normality may be close at hand.

### THE EQUIPMENT TO MEET COMPETITION

In the opinion of the British Iron & Steel Federation which speaks for both the nationalized and privately owned sections of the industry, "the re-emergence of German competition and the probable increase in competition from America will make the expansion of metal goods exports on the scale of the last six years a much more difficult proposition. There will be growing need to seek new markets and new products for export."

To say this is not to suggest that the ambitious programme of re-equipment should be halted. Indeed, it may be all the more necessary that the industry should be advanced to the highest possible level of technical efficiency. New equipment however costly it may be must be provided. The steel industry cannot survive, still less will it be able to meet essential and expanding national requirements without the new plant which is projected in the second Development Plan.

### HEAVY DEMANDS ON THE CAPITAL MARKET

The problem of financing long term capital development schemes of such magnitude is one which admits of no easy solution. Much, though not all, of the expenditure to date has been provided out of the industry's own resources. Moreover, some of the more ambitious schemes for the construction of new integrated plants in Scotland, the North-East Coast and the Midlands have been held up because of the need to restrict investment. It is calculated that the liquid resources of the Corporation, plus other funds that will become available, will not be sufficient to finance capital requirements beyond the end of the current year, and that thereafter the industry will have to revert to external loans.

Thus it will appear that in 1953 there will be two competing claims for steel finance. Under the de-nationalization scheme, the private companies will require very substantial sums to repurchase the properties which are now State owned, and the support of the investing public will

need to be enlisted to provide the funds for further development. Obviously these dual claims will impose a severe strain on the nation's limited capital resources. No doubt there will be little difficulty in disposing of the most profitable and efficient plants, but other properties upon which huge expenditures are necessary to bring them up to date may be less attractive. Furthermore, the value of steel investments can scarcely fail to be affected to some extent by the persistent threat of the Socialist Party to re-nationalize the industry if and when they have the power so to do.

### DISRUPTION OF POLITICAL CONTROVERSY

This may be no more than an empty threat. Mr. Lincoln Evans, the chief of the Iron & Steel Trade Confederation thinks that it is control, not public ownership, that matters and in the preliminary outcome of the new Steel Bill, the principle of conceding to workers' representatives a place on the Board of Control is definitely and explicitly embodied. To some extent opposition to de-nationalization is deserved by the provision for public control of the industry on a wider scale than at present, since the proposed new supervisory board will be responsible for the whole of the industry and not merely for the section at present under State ownership.

Will these concessions buy off the opposition? Will the industry be permitted to press on with its reconstruction schemes free from the destructiveness of political controversy? Can the vast financial resources which are required be promptly provided? These are questions to which time alone will provide the answer, but there can be no shadow of doubt that Sir John Green put his finger on the spot when he appealed "for some sort of a decent basis of working," which would enable the industry to carry out the developments needed to meet overseas competition.

In the realm of physical achievement the steel industry has a creditable post war record. Production of crude steel has been raised from 11,800,000 tons in 1945 to 15,600,000 tons in 1951 and will probably exceed 16,000,000 tons in the current year. The requirements of the steel using industries have however expanded still more rapidly. Huge tonnages of foreign steel have been imported at high cost and it is calculated that the total supplies available for home consumption this year will exceed last year's distributions by approximately 1,000,000 tons.

Surprisingly, an increase of this order has not sufficed. The shortage of steel is still acute and more recently the suggestion has been advanced that an unbalanced distribution of supplies under the allocation scheme which was re-introduced earlier in the year, has deprived the steel using industries of the maximum benefit which should have been derived from this improvement in deliveries.

### THE RAW MATERIAL POSITION

Be that as it may, the industry with the approval of the Government has framed its plans on the basis of the expansion of steel capacity to 20,000,000 tons within the next five years and pig iron production from 10,500,000 to 15,000,000 tons. Apart from the increase in physical capacity the new programme must necessarily envisage important changes in the availability of raw materials.

Scrap supplies are now diminishing. The clean up of the battlefields, which has hitherto yielded a rich harvest of ferrous scrap is now virtually complete. Germany has almost ceased to ship scrap to British ports. The scrap famine is universal in its incidence and British steel makers



have been compelled perforce to use a greater proportion of hot metal from the blast furnaces in their furnace mixtures. Much of the new plan is therefore concerned with the increase in ore supplies either from home or foreign sources, the provision of a fleet of ore carriers for the transport of imported ores, and the construction of new high capacity blast furnaces and the ancillary plants.

A number of new blast furnaces have been brought into production during the past three months: others are either projected or in course of construction and it is satisfactory to observe that the increase in the raisings of home ores and the importation of foreign ores have kept pace with the growing requirements of the iron works. Expansion of German and French steel capacity on a scale comparable to that of the United Kingdom fore-shadows, however, increasingly keen competition for the rich imported ores supplied from Sweden and North Africa.

The need for the development of new sources of supply has long been foreseen and it is a happy circumstance that after 4½ years of intensive effort in the creation of mining, transport and loading facilities, a new minefield at Conakry in French West Africa has nearly reached the production stage. The two major parties in this grand enterprise are the British Iron & Steel Corporation (Ore) Ltd., and the Bureau Minière de la France d'Oltre Mer. Production is planned at the rate of 1,000,000 tons per annum, and the first shipment are expected in December next.

#### COKE SUPPLIES

Another problem which is engaging close attention is the provision of adequate coke supplies for the blast furnaces. Spectacular increases in the output of coking coals and of coking capacity are the twin conditions essential for the success of the Development Plan. Many new batteries of coke ovens are in course of construction at the big integrated iron and steel plants and the active co-operation of the National Coal Board has been enlisted.

From the foregoing brief outline it will be seen that the plans for the further expansion of steel production in this country have been carefully considered and that there are no physical difficulties which cannot be overcome. Ultimately, however, the success of the second five-year plan is dependent upon the casting and increase in the requirements of the steel using industries, and the ability of the nation to provide from current income the necessary financial resources to meet the heavy capital investments in new plant and equipment.

#### BRITAIN AND THE SCHUMAN PLAN

In the field of international co-operation, it is early yet to attempt any assessment of the impact of the Schuman Plan upon the economy of the British steel trade.

The High Authority of the European coal and steel community has been duly constituted under the chairmanship of its putative parent, Mr. Jean Monnet, and although Great Britain stands aloof from actual membership, there is plainly anticipated a mutual desire for friendly co-operation between the Community on the one hand and this country on the other. So much is implicit in the appointment of a very strong British Delegation led by Sir Cecil Weir, chairman of the former Dollar Exports Board whose duty it will be to lay the foundations for "an intimate and enduring association between the Community and the U.K., and of dealing on a day to day basis with the many problems of common interest which will arise as the Community develops."

Obviously there is wide, indeed almost limitless, scope for these discussions. West Germany, France, Italy and

the Benelux countries are all planning big programmes for the expansion of productive capacity. There are obvious dangers of redundancy which may be mitigated by consultation and co-operation. The provision of supplies of raw materials, one of the most formidable problems confronting the industry can best be achieved in a spirit of mutual co-operation, and adjustment of price levels may be the only alternative to cut-throat competitions in the more difficult conditions which are beginning to develop in foreign markets.

Amongst the members of the Pool, strains and stresses may develop, testing the stability of the supra national authority. That fear has no doubt inspired the British authorities to retain for the present at all events, a position of friendly independence.

But short of the active participation which is involved in direct membership there is wide scope for co-operation, and the sincerity of British intentions is betokened by the fact that consultations are to begin early next month at Community headquarters in Luxembourg, and that the U.K. Delegation will comprise representatives of the Foreign Office, the Ministry of Supply, the Ministry of Fuel and Power and advisers from the coal, iron and steel industries representing both management and labour, who will be charged with the duty of reporting direct to the Foreign Secretary, Mr. Anthony Eden.

## Belgian Congo

(From Our Own Correspondent)

Brussels, Aug. 20

Your correspondent has just received the export returns from the Belgian Congo and Ruanda-Urundi for the first half of the year, to which the figures for the corresponding periods of 1950 and 1951 are appended. Nearly all sections of the mining industry expanded in 1951, and this favourable trend has continued up to the present time.

The export returns do not necessarily coincide with the figures of production, which only became available at a later date, because nearly all the mines are far inland and consequently there is apt to be a lag between output and shipping and also because some producers hold their output if they consider the ruling prices are not favourable. Moreover the export returns indicate production in the Congo itself. Thus in the case of silver, of which the colony is a producer of some importance, only a small quantity is separated there; thus in 1951 the Union Minière recovered 118,046 kilos of silver, refined at Hoboken, though only 1,015. 510 kilos were actually recovered in the colony and this is the only figure shown in the export return. Moreover, exports of radium and uranium are not disclosed at the request of the U.S. Government.

It is interesting to note that the value of the mineral exports is not only by far the largest single item but actually exceeds that of all other exports combined; amounting to Frs. B.5,703,825,037 as against the total value of all exports amounting to Frs. B.9,545,730,770. Details of the exports are as follows:—

	1950	1951	1952
Cadmium .....	kilos 12,202	13,788	10,297
Cobalt (94% granules) .....	kilos 1,112,640	1,276,608	1,547,936
Copper-cobalt alloy .....	kilos 3,320,390	3,274,760	4,419,950
Copper .....	tonnes 82,725.2	92,565.7	94,686.2
Diamonds (gem) .....	carats 263,128	342,269	268,222
Diamonds (industrial) .....	carats 4,841,580	4,912,466	5,524,394
Gold (crude) .....	kilos 5,086.452	5,619.953	5,963.028
Manganese ore .....	tonnes 5,440	25,541	46,749
Silver .....	kilos 334,739	487,557	394,285
Tantalum-niobium ore .....	—	125,465	92,216
Tantaliferous slags .....	kilos —	2,203,201	263,230
Tin concentrates .....	tonnes 7,539.4	7,513.3	8,626.4
" metal .....	tonnes 1,855	1,389	1,283
Tungsten concentrates .....	tonnes 354.2	104.1	362
Zinc conc. (raw) .....	tonnes 26,013	54,438	57,816
" (roasted) .....	tonnes 24,552	24,822	30,139
" slimes .....	kilos 828	—	11,868



## THE PALEY REPORT—III.

## Lead—"The Dark Outlook"

With this article we continue our series of summaries from the Paley Report of projected free world metal requirements over the next twenty-five years. Comment on the lead situation presented in this report appears on page 221. We would again emphasize that the Paley Report is an extremely voluminous document and that the summaries we are presenting can only attempt to highlight the more important conclusions.

The world outlook for lead is regarded by the compilers of the Paley Report as the most serious of all the principal metals, and is characterised on the basis of currently available information as "dark."

In the first half of the century U.S. apparent consumption was about quintupled, but while domestic production doubled during the first twenty-five years and rose to 684,000 s.tons in 1935, by 1950 output was one-third less at 434,000 s.tons.

The total consumption in 1950 was 1,212,000 s.tons of which 434,000 were from mined production, 428,000 from scrap and 565,000 from imports. Total demand for lead in the U.S. during the coming 25 years is expected to grow about 60 per cent as fast as the total national output of goods and services and, as the following table shows, would on this basis reach a total of 1,950,000 s.tons by 1975.

## U.S. Lead Demand — Current and Projected

	1950 (000's s.tons)	1975 (000's s.tons)
Storage batteries.....	416	707
Cables.....	133	67
Paint and varnish.....	64	77
Ammunition.....	33	66
Oil refining and gasoline.....	120	300
Construction.....	128	141
Insecticides.....	12	36
Printing.....	31	54
Foil.....	3	3
Ceramics.....	24	48
Colours.....	26	69
Railroads.....	19	38
Automobiles and trucks.....	23	31
Solder.....	18	27
Other uses.....	162	243
Allowance for exports of fabricated lead	—	73
Total U.S. lead consumption.....	1,212	1,950
Less scrap.....	-428	-750
Total demand for U.S. new lead...	784	1,200

On the basis of these figures, and allowing for a concomitant growth in scrap availability, the demand for new lead is expected to increase from 784,000 s.tons in 1950 to around 1,200,000 s.tons in 1975. An increase of this order would by 1975 require about 200,000 s.tons more new lead per year than were available to the U.S. in 1950 from domestic production and imports. On the other hand the best that can be hoped for from domestic mine output is that it will not decline by more than 50 per cent by 1975. It is thus apparent that the United States will increasingly have to rely on imports, the demand for which at the end of the 25 year period may be some 60 per cent greater than the 565,000 s.tons imported in 1950.

## ORE RESERVES

U.S. "proved" reserves in 1950 amounted to only about 1,000,000 tons equivalent to less than three years' output. "Indicated" and "inferred" reserves raised the total to slightly over 8,000,000 tons of recoverable lead, "inferred" reserves counting for nearly all the addition. On this basis it is thought that domestic output will

decline gradually after 1956. The reserve outlook is considered more favourable in other countries as is shown in the table below, but against this, consumption in these countries is also expected to grow more rapidly.

Outside the United States, on the data available Australia occupies the most prominent position, as the reserves of lead in more than ores are almost half as large again as those of the U.S. and nearly twice as large as those of Canada. Measured and indicated reserves are today estimated at nearly 13,000,000 tons of contained lead in lead-zinc deposits of currently commercial or near commercial grade. However, this ignores the question of available labour and Australian labour is particularly refractory to the influence of prices.

Measured reserves in Canada are taken at 4,600,000 tons of lead centred largely in the Sullivan Mine. In Mexico reserve estimated in general are poor, being estimated at +750,000 s.tons though potential and submarginal sources are thought to be large.

General reserves in Peru are currently estimated at 1,500,000 tons. In North Africa total ore reserves are estimated to contain 1,250,000 tons of lead. Reserves in Asia are given as 1,000,000 tons in Burma, 3,000,000 s.tons in the U.S.S.R. and 500,000 tons in China. For Nigeria, the surprising allowance of 1,200,000 tons is made, equal to that of Spain; for Tanganyika 600,000 tons; for South West Africa 900,000 tons; for Japan 300,000. Turkey is credited with 350,000 tons of mixed ores containing 7½ per cent lead and 5 per cent zinc. In Europe, Germany is credited with 2,000,000 tons, Spain with 1,200,000 tons and Poland with 400,000 tons.

## Free World Lead Reserves

(000's s.tons contained metal)			
Argentina.....	1,300	Nigeria.....	1,200
Australia.....	12,700	Peru.....	1,500
Belgian Congo.....	50	Spain.....	1,200
Bolivia.....	100	Sweden.....	500
Canada.....	4,600	United States .....	8,300
French Morocco...	1,000	Others.....	4,400
Germany.....	2,000		
Japan.....	300	Total.....	40,000
Mexico.....	750		

It will be seen from the foregoing ore reserve figures that the "proved" and "indicated" ore reserves outside of the U.S. are estimated at some 30,000,000 tons of recoverable lead. As, however, is shown in the following free world consumption estimates, free countries outside the U.S. are faced with a consumption growth from 844,000 s.tons in 1950 to 1,500,000 s.tons in 1975, equivalent to an increase of around 78 per cent.

## Projected Primary Lead Consumption in the Free World

	1950 (000's s.tons)	1975 (000's s.tons)	Percentage Increase
United States.....	784	1,200	53
Canada.....	56	94	68
United Kingdom.....	181	253	40
Free Europe.....	451	713	58
Australia and New Zealand	42	85	103
Japan.....	13	32	143
Others.....	101	323	220
Total.....	1,628	2,700	66

To meet such an increase, coupled with the much expanded U.S. import requirements, it would be necessary as is shown in the chart below, for the rest of the free world to double its mine production over the next twenty-five years.

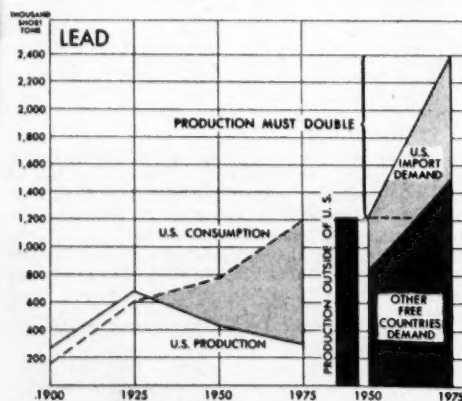
### PROSPECT FOR NEW DISCOVERIES

To achieve such an increased rate of production discoveries of new deposits at present unknown will almost certainly be necessary, but the prospect of such discoveries are generally unfavourable.

Of 174 deposits of lead, zinc or the combined ores, of which data are available, only 15 are straight lead propositions and the Greenland deposits are the only post-war discovery of any possible significance. Mixed lead-zinc deposits are more abundant and chances of discovery somewhat better. As a rule, however, zinc contents of such deposits are in the ratio of 2:1 of lead, and most of these new deposits are zinciferous only. Thus the mixed orebodies do not appear likely to contribute enough lead to promise to meet the estimated expansion in consumption.

The broad conclusion is that world output must be doubled by 1975 and that with demand unlikely to be satisfied over much of the coming quarter century at prices near the current level, the market may be expected to show a marked tendency to rise relative to changes in general prices. This would help towards the discovery of some new ore, but the net result is likely to be modest. In view of the pessimistic outlook among geologists and mining engineers regarding discovery, supply may increase sufficiently to keep pace with growing demand during the next few years but fall appreciably short over the whole period envisaged.

Under these circumstances a major adjustment would have to come from the demand side, either by substitution of other materials for lead in the end-uses or by the consumption of less lead without concomitant substitution. It is doubtful whether substitution would be very responsive to price beyond what can be immediately foreseen. The toxicity of lead has already resulted in restrictions of those uses for which it has a high specific



This chart read in conjunction with the table of free world consumption on the preceding page shows how, by 1975, a projected annual increase in demand for new lead, amounting to 1,072,000 s.tons, can only be met by 100 per cent increase in production outside the U.S. over a period when U.S. production is expected to decline from 430,000 s.tons to 300,000 s.tons or less.

suitability and where price is a minor element in determining its use, such as batteries, cable sheathing and tetra-ethyl lead. The employment of lead in storage batteries is expected to show the largest tonnage increase during the next quarter century though of course the recovery from scrap is high.

One of the largest percentage increases should be in tetra-ethyl lead in view of the current trend towards higher compression engines—a use in which there is no scope for scrap recovery. While there is, as yet, no satisfactory substitute for tetraethyl lead, certain factors may retard expansion of its use and perhaps eventually eliminate this use altogether.

Substitution of lead in bearing metal and pigments is thought to have gone so far now that these uses should share in the general increase in consumption in the future, but full exploitation of plastics is expected to reduce lead consumption for cable sheathing by about one half. In general the growth of demand for end products containing lead must make the effect of future substitution relatively insignificant, and overall opportunity for further substitution is relatively limited.

### Cavaet Process at Pinyok

A short account of the Cavaet plant for volatilizing tin ore, erected, after long study in Great Britain, at the Pinyok Mine in Thailand, is contained in a U.S. Geological Survey Bulletin recently published. The staff assembled to start the smelter (including the then *Mining Journal* Malayan correspondent) were all massacred when the Japanese invaded the district. The Bulletin account is as follows:

The Pinyok Mine in Thailand, three kilometres N. of the Malayan boundary, was first worked by Chinese miners. In 1930, exploration was begun by the British American Tin Mines, which erected a 100-ton mill in 1935. The mine operated until the Japanese invasion of Thailand in December, 1941, and was re-opened late in the war under Thai management. It was closed at the end of World War II and has not since been operated. The General Manager, Mr. Harry, estimates that 500,000 tons of ore averaging 3.6 per cent tin were crushed during the life of the mill. Recoveries were very low, ranging from 18 to 36 per cent of the contained tin. Low recovery is attributed to the fine grain size of the cassiterite contained in the ore. Thus, about 400,000 tons of mill tailings containing more than 1 per cent of metallic tin are impounded on the property.

In 1939, in an attempt to increase the recovery of tin, the company began the construction of a chemical-treatment plant. The plant is the first to employ the Cavaet process, whose name is an acronym for "Chloridization and volatilization and electrolysis (of tin)." In this process the tin ore is ground to eight mesh, dried, and roasted in a rotary kiln at 800 deg. C. with charcoal, and calcium chloride. Cassiterite is reduced by the carbon and combines with chlorine to form volatile stannous chloride which is easily dissolved in water at the lower end of the kiln. When the stannous chloride solution has built up to a suitable strength and other harmful chlorides such as antimony, arsenic, and copper have been precipitated, it is electrolyzed and the metallic tin is plated out of the solution. The tin is then stripped from the cathodes and cast into ingots.

Reconstruction of the plant was begun in 1948, and it was expected to be ready for a trial operation in mid-1950. Should it prove successful in treating the mill tailings, it is probable that lode mining will be resumed.

## The Fire Resistant "Scandura" Belt Conveyor

The research work carried out into the uses of poly-vinylchloride in the manufacture of non-inflammable conveyor belts was the subject of an article which appeared in *The Mining Journal* on June 20 under the title "Research on Conveyor Fires." The essential point brought out in this article was that a conveyor belt in which P.V.C. replaced the rubber in the covers and in between the plies was non-inflammable or self-extinguishing. This was a development of great importance, as the major proportion of fires occurring underground originate within the conveyor system. It is, therefore, easily understood why the National Coal Board has accorded such high priority in its research programme to developing and encouraging methods of eliminating the fire hazards arising from the use of belt conveyors in British collieries. Although there are nearly a dozen companies engaged in the task of developing the use of poly-vinylchloride conveyor belting for coal mines, the following article views this development from the standpoint of the British Belting & Asbestos Co., to whose factory at Cleckheaton, in Yorkshire, *The Mining Journal* recently paid a visit to see the progress being made on what promises to become a major advance in the field of belt conveying, and one moreover in which B.B.A. can fairly claim to have been the pioneer.

The fact that British Belting and Asbestos have been in a position to develop poly-vinylchloride conveyor belting follows from the company's long experience with the manufacture of textile belting which began nearly 75 years ago, since when its "Scandinavia," a cotton base belt, and "Saturn," a hair type belt, have enjoyed a worldwide reputation. While the basic textile materials used in these belts adequately met the mechanical strength and flexing requirements of both power transmission and conveying, they were not sufficiently immune from moisture effects to satisfy all conditions of service. Nor did the addition of bitumastic dressings, oil dressings, or even rubber latex, do more than partially rectify these deficiencies.

As is so often the case with industrial developments, the solution to a particular problem in one field of endeavour is found in another and quite unrelated field. Over a period of years, the company made extensive use of heat resisting plastics in the manufacture of its Mintex Brake and Clutch Linings and about twenty years ago began serious investigations into the possibilities of introducing flexible plastics into its transmission and conveyor beltings. Although considerable success attended these efforts, particularly in certain specialized applications such as in the production of their "Non Flam" textile webbing, which used a dressing based on chlorinated rubber, it soon became evident that the plastics commercially available in the U.K. prior to 1939 were not suitable for use with textile beltings. This was due to the serious deterioration in their mechanical properties which took place when they were subjected to the degree of plasticisation necessary to provide adequate flexibility. Yet despite the obvious shortcomings in the plastics then available, it was observed that vinyl chloride polymers and co-polymers showed great promise of providing a flexible product with good mechanical properties and freedom from surface tackiness.

### POST-WAR RESEARCH WORK

Further investigations into the attributes of these polymers and co-polymers had to be put aside during the war, but in 1945 when research work was resumed it was soon found that a solid woven textile belt with a surface coating of plasticised P.V.C. yielded a product containing many qualities valuable for conveyor belting. A year later the first P.V.C. conveyor belt, to which the company gave the name "Scandura," was sold to the food industry and in March 1948 the company had the satisfaction of seeing a B.B.A. "Scandura" coal conveyor belt unit installed at the Manvers Main Colliery in Yorkshire, the first plastic conveyor belt ever to be so used. To-day it is accepted by the National Coal Board as a proven success for underground coal conveying.

B.B.A. "Scandura" belting has a solid woven base fabric, which is subsequently coated with the thermo plastic P.V.C. (B.B.A. define the term "solid woven" as meaning a multi ply belt where the plies are actually interwoven

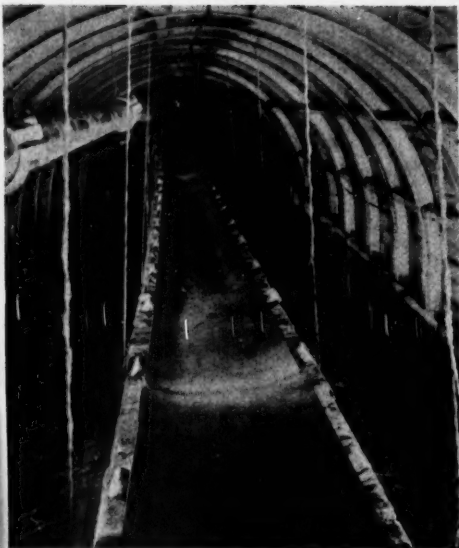
and have no dependence on the adhesive properties of the covering material, which is an inherent feature of the common impregnated canvas duck construction). Impregnation occurs through the surface of the belt, which is sufficiently open for the P.V.C. to penetrate and become firmly anchored to the textile threads and completely sealing off the inner fabric. This process has been carried still further in the company's latest types of coal conveyor belting, where the solid woven fabric is also thoroughly impregnated with P.V.C. prior to the final outer coating being applied. These latest types of coal conveyor belts also have a synthetic fibre base, which adds material strength and is less liable to stretch.

### THE ESSENTIAL FEATURES

The outstanding feature of poly-vinylchloride belting of the "Scandura" type is, of course, its resistance to fire, a property imparted to the belt by the P.V.C. which will not support combustion. But there are other important qualities to be taken into consideration when assessing the usefulness of these belts, and from experience gained in almost every area of the National Coal Board, it is claimed that the "Scandura" belting showed marked abrasion resisting qualities, and that by virtue of its solid woven construction it reduced ripping to a minimum. Length variation in service is negligible due to the use of the rayon fibre; fasteners hold to a remarkable degree; the belt is mildew and rot-resistant as well as being non-inflammable; and finally, it is unaffected by mineral oils, dilute acids and alcohol solvents. Development work carried out by the company involved the designing of special machinery and equipment to spread and cure the P.V.C. covering. Coal conveyor belting is covered entirely, but many other applications require coating on one side only.

Research into the suitability or otherwise of various P.V.C. compounds under a wide range of temperatures yielded some interesting results. One grade was found to be unsuitable for operations below -5°C., owing to stiffening of the plastic, while another standard type was suitable down to about -30°C. However, by using the knowledge available of P.V.C. compounds suitable for low temperature use, types suitable for temperatures down to about -70°C. can be produced. At the other end of the scale, the plasticised coating will begin to soften at 60/70°C. and the belt is therefore unsuitable for continuous exposure to temperatures above this figure. On the other hand, the belt has been used, and found to be satisfactory, as a conveyor for materials at temperatures up to about 120°C. Generally speaking, however, the temperature range for the Scandura belts, which are made from  $\frac{1}{2}$  in. to 42 in. in width and from  $\frac{1}{16}$  in. to  $\frac{1}{2}$  in. in thickness, may be said to extend from -70°C. to +100°C.

Scope for the utilization of P.V.C. belting appears limitless. At present in the United Kingdom there are approx-



These P.V.C. belt conveyors are both installed in pits of the National Coal Board. The effective fasteners mentioned on the preceding page are shown in each picture

imately 18,000,000 ft. of conveyor belting in use underground, of which 9,000,000 ft. are being replaced each year. But currently, only a small fraction of the replacement footage can be made from poly-vinylchloride. One of the reasons which may be cited as cause for delay in raising total production is that surface experiments and tests are necessary before a belting can be approved by the National Coal Board for service underground. Moreover, while British Belting & Asbestos Co.'s "Scandura" Belt is in regular production, this company's current output will remain restricted until factory extensions now being erected at Cleckheaton are complete.

Nevertheless, P.V.C. belting is obviously here to stay. Sir Andrew Bryan in his recently published report on the Cresswell Colliery Disaster, emphasized the importance of the non-inflammability of P.V.C. belting and intimated that it was the joint aim of the National Coal Board, the mining companies and the belting manufacturers completely to re-equip British pits with P.V.C. belting at the earliest possible moment.

This sentiment is understandable, for statistics covering the years 1940-1950 show that during this ten year period about 75 underground fires occurred, on an average of about seven per year, and that the majority of these fires originated within the conveyor system. Specific sources of trouble, apart from electrical installation faults, were traceable to friction caused by driving drums rotating against slipping belts, or strips of belting torn free and becoming entangled in revolving shafts. Thus it leaves little to the imagination to realize the vital contribution to safety and efficiency which the introduction of P.V.C. belting can make to the coal mining industry of the United Kingdom.

Against a world wide background, the use of P.V.C. Belting was discussed at the International Safety in Mines Conference last month where it was revealed that many other countries are keenly interested in equipping their pits with fireproof belting as quickly as possible. Be that as it may, Britain has more poly-vinylchloride belting installed in her mines than any other country and it is

certain that production in the immediate future will be concentrated on supplying the coal mines of this country with this product. In the longer run, however, its adoption by the world's metalliferous mines must surely follow.

## Manganese-Recovery Process

An experimental furnace that recovers an iron-manganese mixture containing from 12 to 24 per cent manganese from open-hearth slag has been developed by the United States Bureau of Mines at the Central Experimental Station, Pittsburgh, Pennsylvania, according to a report in *The Iron Age*. At the present time the furnace functions for periods of about two weeks without shutdown, and the process may materially aid in the recovery of the 700,000 tons of manganese discarded in slag each year by American industry.

The blowing of the metal which results from the new technique, in a basic-lined converter, produces a high-manganese slag containing from 56 to 63 per cent manganese. This constitutes a synthetic ore for the production of ferro-manganese.

A number of problems had to be overcome before the development took place. In initial tests the furnace was blown in similarly to a commercial unit, but the hearth remained cold for many hours and was difficult to tap or flush. In the present furnace, scrap is charged during the blow-in, similar to a cupola at a blast of 600 cu. ft. per min., and a metal-coke ratio of 1 to 6. The large flow of molten metal into the hearth heats it rapidly and the furnace is tapped easily. Another early difficulty, necessitating changes in furnace design, was the tendency for slag to freeze just below tuyere level. The major problem in the process is the control of the phosphorus content of the slag. While recovered manganese now averages 60 per cent, longer operations and recovery of manganese lost in flue dust may make possible higher yields.



## TECHNICAL BRIEFS

### Experiments on the Underground Gasification of Coal

Further experiments concluded in America have emphasized the potential use of some method whereby the gasification of coal underground can supply a driving force for gas turbines and generating steam, according to a note in *Mechanical Engineering*.

During one experiment two gas turbines were installed and operated for 100 hours on combustible gases captured from the burning coal. The energy produced by the turbines was used to compress air and to return it underground to the gasification system. In commercial operations this excess energy would be produced for useful purposes, and further tests may prove the feasibility of producing gases for conversion to synthetic liquid fuels or chemicals.

Provided that technical aspects are feasible, the underground gasification of coal can be applied in three ways. Firstly, by the complete combustion of underground coal with air and the utilization of the resultant heat energy in gas turbines or in raising steam. Secondly, by the production of producer gas with air, and the utilization of the combustible gas in gas turbines. Thirdly, by production of synthesis gas by gasification of coal with oxygen and steam, and by the use of the gas in the manufacture of synthetic liquid fuels or organic chemicals.

To arrive at these conclusions, two series of experiments were conducted. The first established merely that coal could be gasified as it lay underground and that the burning could be controlled. The second series of tests was completed last year, during which in 22 months of continuous operation 10,485 tons of coal which underlay approximately two acres were gasified. It therefore appears that no limit can be drawn as to the coal areas from which combustible gases can be obtained.

Over a four-month period, when 65 per cent of the heating value of the coal consumed in one area was utilized, the energy yield was greater than that which could have been obtained under existing mining methods from minable coal in the same area. During one period of eight hours combustible gas with a heating value of 90 B.T.U. per cu. ft. was produced at a rate of 9,400,000 cu. ft. per day. When new inlets and outlets were driven near the ignited coal faces, gases of calorific values of 75 to 150 B.T.U. per cu. ft. were produced. Since such gasification is still in the experimental stage, no definite economic evaluation can be offered at present.

The experiments were carried out at Gorgas, Alabama, and in the same area a new installation is being constructed. This features a series of electrodes for passing electric current through the coal seam to open passages for air and gases. The proposed bed to be tested covers larger areas than those hitherto subjected to experiment, with the result that greater distances exist between outcrops. It is expected that the new method will reduce the leakage which hampered both of the previous experiments. This new electric system reduces site development costs and is said virtually to eliminate all underground labour.

### High Purity Copper from Sludge

Copper of high purity, providing a fine spongelike texture, large surface area, and high chemical activity, is being salvaged from waste pickling sludge of the brass and copper industries, according to *Industrial and Engineering Chemistry*. The salvaged material appears to be highly valuable as a gas or liquid-phase reaction catalyst and the new method, which may replace the electro-deposition and scrap-iron removal of copper from sludge, also recovers a portion of zinc and in addition may eliminate the problem of disposing of acid pickling baths.

The physical characteristic of the copper formed in the displacement reaction is a sponge-like structure that is strong enough to support 25 times its own weight. Under greater weight it crumbles to a fine powder. The first step in the displacement reaction involves removal of 70 per cent of the acid from the sludge by vacuum filtration, followed by a union of the remaining acid with the zinc and hydrogen which causes a turbid condition that acts as a physical force to separate the copper.

The actual displacement of the copper is also dependent upon the presence of from 4 to 7 per cent of sulphuric acid in the solution, and upon the degree to which the entire solution is agitated. The degree of agitation required to form a sponge-like

copper of 99 per cent purity involves passing the solution past the zinc at a rate slow enough to bring fresh solution in contact with the zinc and to form a fine cloud of evolving hydrogen. The hydrogen cloud helps to prevent the copper from disintegrating by a fast gas-bubble formation or by force of movement that is too rapid. Production proportions can be illustrated by the fact that laboratory tests have produced a  $\frac{1}{2}$  in. layer of copper sponge from 100 grm. of 33 per cent sludge solution with a zinc-reaction area of 10 sq. in.

### Weirton Steel Has New Detinning Process

An effective method of removing tin coatings is being used by the Weirton Steel Co. of America. The detinning reagent is a 50 per cent solution of sodium hydroxide with additions of sodium nitrate. A closed coil steam system heats the solution to 195 F. in a process which requires a time limit of 2½ hours.

The chemical reaction in the detinning process results in sodium stannate, which is precipitated out of the saturated solution in the form of a slurry. This is pumped from the detinning tanks to a Bird filter which separates solid matter from the solution by centrifugal action. The filtrate is returned to the detinning tanks and the solids are continuously discharged into dissolving and precipitation tanks where the precipitate enters into solution with water.

After a period for settling, the clear sodium stannate is decanted to a second tank in which it is treated with sulphuric acid to neutralize any remaining alkali. After a slight acidification sodium carbonate is added to form tin hydroxide as a precipitate.

The tin hydroxide slurry is filtered, washed and dried, and is fired in a gas furnace until it forms tin oxide. This produce is cooled and mixed with fine anthracite coal at 4 : 1 ratio graded by weight, and is charged into electric reduction furnaces. In this final treatment, the carbon unites with the oxygen of the tin oxide to free commercially pure tin.

### Industrial Silver Solders

Detailed information on "Thessco" silver solders, brazing alloys and fluxes is contained in a comprehensive pamphlet published by the Sheffield Smelting Co. Ltd. In its pages the alloys are grouped showing solders with low melting ranges of 620°C. to 680°C., medium ranges of from 755°C. to 780°C., and high melting range solders of from 835°C. to 893°C.

Brazing initially was confined to copper-zinc alloys of relatively high melting range, but subsequent investigations have led to the development of silver solders which are quaternary alloys of silver, copper, zinc and often cadmium, and have an approximate melting range of 600°C.

As an example, it is stated that the "Thessco" SX5 solder has a tensile strength of 13.0 tons/sq.in. at room temperature, 7.0 tons/sq. in. at 50°C., and these strengths grade up to 0.4 tons/sq. in. at 250°C. Full details of the silver solders are given in detail in the booklet.

A list of "Thessco" fluxes suitable for low temperature and general brazing operations shows that temperature applications of these products range from 450°C. to 1,000°C.

### Cyanidation of Gold-Silver Ore

A cyanidation process for the treatment of gold-silver ore from Manhattan, Nevada, has been described by A. L. Engel (*U.S. Bur. Mines, Rept. Invest. No. 4819, 1951*). The ore is an altered diorite rock showing 0.16 oz. of gold and 2.8 oz. of silver per ton of ore. Most of the silver content is associated with sulphide minerals of copper, lead, and zinc. The ore is crushed to -10 mesh and then separated at 65 mesh. The portion larger than 65 mesh is cyanided by leaching and the slimes below 65 mesh by agitating. This is continued for 48 hours when the pulp is thickened to a 1 : 1 solids to water ratio, part of the solution being recovered. The pulp is then diluted to a 1 : 2 ratio and extracted with activated carbon. The author states that this method eliminates further washing of the slime pulp and recovers most of the excess cyanide which must be used in order to obtain optimum extraction.



## METALS, MINERALS AND ALLOYS

The rapid expansion of the metal-using industries in the U.K. since the end of the war has been examined by the British Iron & Steel Federation. This study forms the basis for a forecast of the possibility of continued expansion. The Federation's conclusion is that some fall in the rate of expansion might be seen. The chief reasons given for this are that post-war expansion is measured from 1946 when the changeover from war to peace was limiting output, that limitations to the rate of expansion of the labour force in the metal-using industries will affect the rate of output, and that increasing competition will make the sale of goods overseas more difficult to maintain. The Federation also points out that the balance of payments position is likely to lead to an emphasis being placed on the need for exporting goods of high quality. Such goods would have relatively speaking, a much greater amount of "know-how" and skill than material and any development along this line could lead to a decline in the use of metals, and a relief in the import bill while maintaining exports.

N.P.A.'s removal of copper and aluminium from the list of critical metals, coupled with its announcement that curbs on essential constructional work will be substantially relaxed before next spring, is providing New York metal traders with additional reason to wonder how much longer Washington's Controlled Materials Plan will be continued for steel, aluminium and copper.

An O.P.S. order will be issued next week permitting U.S. manufacturers using copper, steel and aluminium in their products to increase their ceiling prices by the full amount of the recently granted price ceiling increases for these primary metals.

There are signs that the threatened nation-wide strike in the U.S. non-ferrous mining industry may be averted despite the vote of the International Union of Mine, Mill and Smelter Workers in favour of strike action. Phelps-Dodge, one of the copper industry's big four, has reached an agreement with the Union which provides for a general wage increase of 8c. an hour, as well as other benefits, and it is now reported that Anaconda and A.S.R. are ready to resume negotiations.

**COPPER.**—The abrogation of the copper agreement between the U.S. and Chile and the assumption of the role of sole seller by the Chilean Central Bank has so far proved profitable for Chile. That country has received an extra \$27,000,000 on the 112,000 tons sold to date, as a result of the increase in price from 24.5c. per lb. to 35.5c. per lb.

In order to standardize the restrictions imposed on the end-uses of copper, the council of O.E.E.C. approved in 1951 a list of more than 200 prohibitions. This list has now been revised and many articles have been removed because of the improved world supply position of copper. This relaxation is the logical sequel to the greater allocations of copper made by I.M.C. for the third quarter of the year.

The stockpiling of copper in the U.S. has run into difficulties. The authorities refused to take up the August allocation on the grounds that it consisted solely of foreign copper costing 36½c. per lb. The September allocation, however, consists of the standard proportions of 60 per cent domestic metal and 40 per cent foreign, but the authorities have, so far, declined to indicate if they will take up this allocation either. However, having regard to the continued strong demand for copper, both domestic and foreign (September offerings of the latter at 36½c. being already practically sold out), there seems no reason to think that private demand will have any difficulty in absorbing any stockpile allocations which are not taken up.

The Australian Government has raised the domestic price of copper from £A.285 to £A.350 per ton: the new price is equal to £280 per ton, which compares with the Ministry of Materials' selling price of £285 per ton. In connection with the new copper-lead-zinc discovery announced this week at Mount Isa, to which reference is made in our lead note below, it has been announced by Mount Isa Mines that the new copper smelting plant which is in course of erection will be completed early next year. The plant will handle between 15,000-18,000 tons of ore per annum. At present domestic copper production supplies one-third of Australia's needs.

**LEAD and ZINC.**—Both the lead and zinc markets in the U.S. have remained steady but quiet during the last week with prices unchanged. There is a rumour that the G.S.A. and the British Ministry of Materials are negotiating for further British sales to the American stockpile.

Mount Isa mines is reported to be exploring important new copper-lead-zinc formations about 11 miles north of the town of Mount Isa. Boreholes have penetrated the orebody in 20 places and four exploratory shafts have been sunk on the outcrop. According to the company's chairman, Mr. Kurt Schmitt, the lead content of the ore is comparable in grade to that already being worked. In general, tests so far carried out justify a further programme of exploration although it is not yet possible to determine the extent of the orebody.

The company also hopes to install a zinc fuming plant which will cost several million pounds. If it is erected—and the decision depends on the course of metal prices—it will be used to treat slag dumps amounting to over 1,000,000 tons. The slag has a zinc content of 14 per cent. Although no estimate is given of the time to be taken in treating this slag, it is clear that it will make a useful addition to the company's output. Production of zinc concentrates in the last full financial year amounted to 45,000 tons.

**TIN.**—The production of tin in Indonesia has received another fillip during July, when the output of tin-in-concentrates reached the record post-war level of 3,394 tons. The table of tin outputs on the next page indicates the progress Indonesia is making in eliminating the 1951 decline in output. In contrast, the export of tin from Indonesia is declining, the amount exported in July was only 2,402 tons against 2,856 tons in June, and the total for the first seven months of the year was 17,052 tons, as compared with 17,935 tons in the corresponding period of 1951.

The cessation of the ban on the private importation of tin into the U.S. has led to the clarification of a price regulation. This clarification contained in an amendment to the regulations imposes a ceiling calculated on the basis of landed cost, plus a dollars-and-cent mark-up. The fixing of a ceiling is not expected to affect current prices but importers complained that they could not operate under the regulation, and dealing came to a halt. The price regulation requires tin importers and re-sellers to report to the O.P.S. the class of buyer to whom they are selling.

The reported proposal to establish a tin smelter in Bolivia to be sponsored, it is said, by European, Argentine and Uruguayan financial interests can be little more than a political gesture, and a pretty empty one at that. Bolivian ores cannot be economically smelted without an admixture of other high-grade ores and there never has, and probably never will be, any economic justification for importing both this ore and the fuel necessary for a smelter, rather than exporting Bolivian ores to existing smelters more conveniently sited for the consumer.

**ALUMINIUM.**—Alcoa is proposing to erect a \$400,000,000 aluminium plant in the Taiya Valley near Skagway in Alaska. The company is relying on diverting the waters of the Yukon for the creation of cheap hydro-electric power. The initiation of the scheme depends on the consent both of the Canadian and British Columbian Governments who are concerned that the Yukon River's power and navigation interests should be adequately protected. The project is expected to take four years to complete and is dependent also on the co-operation of the U.S. Government. Aluminium from the proposed plant would be supplied principally to the U.S. market.

According to Mr. David P. Reynolds, vice president of Reynolds Metals, aluminium is playing an increasing role in the oil and gas industry. He states that research has indicated that within a few years the oil and gas industry will be one of the largest users of aluminium. Experimental work being conducted is expected to demonstrate that aluminium has superior qualities for sucker rods and well tubing, while aluminium oil and gas lines are also thought to have a bright future. Tests under way indicate that aluminium is preferable to steel in certain oil field structures.

**ASBESTOS.**—Johns-Manville is to open up an asbestos mine at Mashaba in Southern Rhodesia. The deposits are the property of Rhodesian Asbestos Ltd. which is controlled by the Johns-Manville Group in association with the British Metals Corporation, Anglo Huronian and the Patino interests.

**MANGANESE.**—The U.S. is still casting around for consignments of manganese ore. Recently a shipment of 500 tons left the Otan Mine, near Auckland, for the U.S. instead of going, as previously, to Australia. The mine is believed to be the only

manganese producer in New Zealand though some experts are of the opinion that an intensive survey might reveal further deposits.

Rumours that American interests are considering the erection of a plant for smelting and refining manganese in South Africa are being accepted with reserve in New York trade circles. Sales of manganese ore from the Union were only 275,393 s. tons in the first five months of 1952, as compared with 329,400 s. tons in the corresponding period of 1951.

**URANIUM.**—The South African *Cape Argus* reports the Minister of Mines as saying that uranium will become almost as great an asset to the country as gold. Although the price being paid for South African uranium has not been disclosed, it seems likely to be a long time before uranium will be realizing a sum approaching the £140,000,000 received by the gold mining industry in that country in 1951.

**GOLD.**—Colombia's production of gold during the half-year ended June 30, 1952, amounted to 233,000 f.oz. For the two preceding half-years, production was 219,000 and 211,000 f.oz. respectively.

## The London Metal Market

(From Our Metal Exchange Correspondent)

Trading in tin on the London Metal Exchange has been less active this week, and following a further fall in the warehouse stocks, the backwarrantage increased to about £22 per ton. This brought out some offerings of Cash tin probably on behalf of the smelters with the result that the spread between the Cash and three months price has contracted somewhat from that level. In the East the demand has been well maintained, and after some fluctuations the market seems to have become steadier there.

U.S. consumers continue to buy whenever they can obtain metal for fairly prompt delivery at a figure below the R.F.C. price.

In copper the Chileans still sell their surplus to the U.S.A. at 36c. but it is reported that 1,000 tons have been sold to Germany at around 35½c.

Lead is quoted around £116 to £117 and zinc is still about £102 to £104. There is very little business passing in either lead or zinc, but with the holiday period drawing to a close, it is expected that some improvement in demand will become apparent.

On Thursday the official close on the tin market was: Settlement price £956, Cash Buyers £955, Sellers £957; Three months Buyers £940, Sellers £941. In the afternoon the market was inactive easier. Turnover for the day was 15 tons. Approximate turnover for the week was 435 tons.

The Eastern price on Thursday morning was equivalent to £969 7s. 6d. per ton, c.i.f. Europe.

## Iron and Steel

The end of the steel famine is in sight. Deliveries to British industries this year are expected to reach the highest rate ever in times of peace. Imports are running at a rate of 110,000 tons a month in excess of last year's figure, home production is expected to increase by 400,000 tons over the twelve months and exports are down. Thus the expectation that an extra million tons of steel will be available for home distribution is probably a conservative estimate. Ship builders, engineers and other big consumers have already been promised increased allocations in the last quarter of the year and there is even a hint that steel rationing may soon be abandoned.

In the latest bulletin of the British Iron and Steel Federation the following statement appears: "If—as there is some reason to fear—the steel allocation scheme leads to an unbalanced distribution of supplies and an accumulation of stocks in consumers' hands, then clearly the maximum benefit will not be secured from the greatly improved deliveries. This is a danger which will need watching in coming months."

The increased tempo of activities in the steel plants is now clearly apparent. Imports of foreign ore are moving up to record heights; more blast furnaces are in action and there has even been a small increase in the stocks of scrap at the steel works. All these factors have combined to give a post-holiday impetus to ingot production and the expansion of activity at the rolling mills.

Export markets are sluggish and competition is keener. Australia is a closed market and re-rolled bar makers find it difficult to secure foreign business owing to the very low prices quoted for small bars by Belgian makers. Requirements for home consumption, however, are very heavy and the more regular

arrival of French and Belgian steel semis is enabling the light mills to achieve better outputs. Sheet makers are very heavily booked for both the home and export markets.

Under a new order of the Ministry of Supply which became operative on Monday last some qualities of alloy steel and stainless steel products are increased in price to take account of the changes in production caused by measures taken to conserve nickel and molybdenum and also to take account of the higher prices of alloy materials. The order also removes blast furnace ferro-manganese from statutory control.

## PRODUCTION OF TIN CONCENTRATES — JULY (long tons)

	July, 1952	Jan.-July, 1952	Jan.-July, 1951
Belgian Congo ...	1,134	7,997	7,532
Bolivia* .....	2,978a	13,495b	14,344c
Indonesia .....	3,394	18,532	17,425
Malaya.....	4,847	33,047	32,922
Thailand.....	764	5,067	6,378

Source: International Tin Study Group. \*Exports: a—May, 1952; b—Jan.-May, 1952; c—Jan.-May, 1951.

## AUGUST 28 PRICES

### COPPER

Electrolytic ... .. £285 0 0 d/d

### TIN

(See our London Metal Exchange report for Thursday's prices)

### LEAD

Soft foreign, duty paid ... .. £131 0 0 d/d  
Soft empire ... .. £131 0 0 d/d  
English lead ... .. £132 10 0 nom.

### ZINC

G.O.B. spelter, foreign, duty paid ... £122 0 0 d/d  
G.O.B. spelter, domestic... .. £122 0 0 d/d  
Electrolytic and refined zinc ... .. £126 0 0 d/d  
Special high grade ... .. £128 0 0 d/d

### ANTIMONY

English (99%) delivered,  
10 cwt. and over ... .. £225 per ton  
Crude (70%) ... .. £210 per ton  
Ore (60% basis) ... .. 25s./27s. 6d. nom. per unit, c.i.f.

### NICKEL

99.5% (home trade) ... .. £454 per ton

### OTHER METALS

Aluminium, £157 per ton.  
Bismuth, 18s. lb.  
(min. 2 cwt. ex-warehouse).  
Cadmium, (Empire) 14s. 4d. lb.  
Chromium, 6s. 5d. lb.  
Cobalt, 20s. lb.  
Gold, 248s. f.oz.  
Iridium, £65 oz. nom.  
Magnesium, 2s. 10½d. lb.  
Manganese Metal (96%-98%)  
2s. 2d./2s. 3d. per lb. d/d  
Osmiridium, £35 oz. nom.  
Osmium, £70 oz. nom.  
Palladium, £8 10s. oz.  
Platinum, £27/33 5s. nom.  
Ruthenium, £45 oz.  
Rhodium, £30 oz.  
Quicksilver, £64 10s. ex-warehouse.  
Selenium, 25s. nom. per lb.  
Silver 73d. f.oz. spot and f'd.  
Tellurium, 18s./19s. lb.

### ORES, ALLOYS, ETC.

Bismuth ... .. 18½ ls. 6d. lb. c.i.f.  
50s. 8s. lb. c.i.f.  
\* Chrome Ore—  
Rhodesian Metallurgical (lumpy) £14 2s. per ton c.i.f.  
" " (concentrates) £14 2s. per ton c.i.f.  
" " Refractory £13 14s. per ton c.i.f.  
Baluchistan Metallurgical £15 8s. per ton c.i.f.  
Magnesite, ground calcined £26 - £27 d/d  
Magnesite, Raw ... .. £10 - £11 d/d  
Molybdenite (85% basis) ... .. 105s. 10d. per unit c.i.f.  
Wolfram (65%) ... .. 425s. c.i.f. U.K. buying  
Tungsten Metal Powder ... .. 447s. 6d. d/d U.K. selling  
(for steel manufacture) ... .. 31s. 7d. nom. per lb. (home)  
Ferro-tungsten ... .. 28s. 7d. nom. per lb. (home)  
Carbide, 4-cwt. lots ... .. £32 3s. 9d. d/d per ton  
Ferro-manganese, home £48 5s. 2d. per ton  
Manganese Ore U.K.  
(48% - 50%) ... .. 6s. per unit  
Brass Wire ... .. 2s. 9d. per lb. basis.  
Brass Tubes, solid drawn ... .. 2s. 3½d. per lb. basis.



# COMPANY NEWS AND VIEWS

## Roan and Mufulira Have Another Good Year

Last week-end Roan Antelope and Mufulira published their preliminary estimated profit figures for the year to June, 1952. These we give in the table below, compared with the actual figures for the two preceding years. The considerably increased earnings of both companies only partially reflect the benefit which they have been deriving this year from the progressively increasing price of copper. It was only in the latter part of June that the Ministry of Materials' buying price rose by £44 a ton to £264, in line with the increased United States price of imported copper, so that the full benefit of this last big price increase will only have been felt by the companies since the end of the financial year.

On the other hand, when the full accounts are published, taxation will only have felt the impact of E.P.L. over the second six months and no doubt in the current financial year the impact of this tax over the whole period will go a considerable way towards absorbing the substantially increased revenue which is in prospect. As it seems unlikely that the companies will suffer any drastic fall in copper price during the current year it must be the tax question which bulks largest on the shareholders' horizon.

Here, shareholders have in recent months been presented with the hope of two possible avenues of escape from the full impact of E.P.L. In the first place the Treasury still have under consideration the companies' application for permission to migrate to Northern Rhodesia. In the event of permission being obtained for the Selection Trust copper companies to follow the trail set by those of the Anglo American group, not only will E.P.L. be avoided but other tax savings comparable with those achieved by the latter group could presumably also be anticipated.

Secondly, it remains to be seen how the Treasury interpret the provisions in the Finance Bill for granting exceptional E.P.L. relief to mines where additional output above normal is held to be in the national interest. At the moment this could mean anything as so far as we are aware no definition of "normal" production has yet been given. In any event the bulk of the companies' increased profits are coming at present from increased price rather than increased production.

During the past year both mines have suffered from the effects of fuel shortage and Mufulira actually shows a reduced output as against the previous year owing to the restricted output in the first quarter of 1952, when coal shortages, combined with the threat of damage to the railway bridge over the Kafue River, lost the mine about 10,000 tons production.

Roan Antelope				Mufulira			
49/50	50/51	51/52		49/50	50/51	51/52	
63.6	74.5	81.0		77.0	86.7	76.4	
127.2	176.2	208.0		126.4	174.9	209.5	
87.2	98.2	106.0		64.1	82.4	102.9	
40.0	78.0	102.0		62.3	92.5	107.5	
Financial Results (£'000's)				Financial Results (£'000's)			
7,994	13,243	16,826	Revenue	9,108	15,017	16,019	Revenue
4,553	5,953	7,191	Operating Cost	4,149	6,048	6,683	Operating Cost
3,440	7,290	9,635	Surplus	4,959	8,969	9,336	Surplus
108	123	104	London expenses and loan stock interest less investment revenue	73	80	67	London expenses and loan stock interest less investment revenue
900	1,250	1,250	Replacement reserve	700	1,000	1,000	Replacement reserve
+2	—	—	Miscellaneous items (+ or -)	-10	-13	—	Miscellaneous items (+ or -)
2,435	5,917	8,281	Profit before tax	4,177	7,876	8,269	Profit before tax
1,615	4,121	Not	Taxation	2,570	5,112	Not	Taxation
99	249	Not	Reserves	486	1,096	Not	Reserves
687	1,546	Not	Dividend	1,143	1,764	Not	Dividend
+34	+1	able	Carry forward (+ or -)	-23	-95	able	Carry forward (+ or -)

\*Including production, selling and administration costs and replacement reserves.

†After adjustment for increase or decrease in blister stocks.

## General Mining's Preference Issue

As already reported in *The Mining Journal* of August 1 (p. 127) General Mining and Finance is applying somewhat novel methods to the problem of fund raising for the development of its O.F.S. and Far West Rand interests. The proposal, of which further particulars are now available, is to issue 750,000 6 per cent Cumulative Convertible Redeemable "A" Preference Shares of £1 each. Subject to this step being approved at an extraordinary general meeting in Johannesburg on September 5, these shares will be offered for public subscription at par. They will be redeemable in whole, but not in part, between September

30, 1959 and September 30, 1969, at 23s. 6d. per share, or alternatively at the option of the Corporation the shares will be progressively redeemed by drawings at 21s. 0d. per share over the ten year period. These convertible preference shares will carry rights exercisable up to October 1, 1959, of conversion into the Corporation's ordinary shares on a descending scale, beginning with two ordinary shares for nine cumulative during the first two years, two ordinary for ten preference in the next two years, two ordinary for eleven preference between October, 1956, and October, 1958, and two ordinary for twelve preference between October, 1958, and October, 1959. Existing shareholders of the Corporation will be given priority in allotment of the preference shares but it is not intended to offer them to shareholders on a *pro rata* basis.

C.I.C. permission for the issue has been received and application has been made to the London and Johannesburg Stock Exchanges for permission to deal.

The extraordinary general meeting will also be asked to approve the creation of 500,000 6 per cent Cumulative "B" £1 Preference Shares. These however are to be held in reserve and will not constitute part of the present offer.

The opportunity is also being taken to increase the ordinary share capital of the company by 500,000 £1 ordinary shares to rank *pari passu* with all existing shares, thus bringing the number of unissued ordinary shares to 822,714.

## Gold Coast Selection Trust's Quarterlies

Perhaps the most noteworthy point in the June quarterlies of the gold producers in the Gold Coast Selection Trust group is the changed presentation of the total profit figure. Since May last, West African gold producers have been allowed to sell the whole of their output on the free market in contrast to the 40 per cent limit operative between November 1951 and May 1952 and as a result the June quarterly reports have discontinued the former practice of showing additional revenue received from premium sales as a separate item.

Company	March Quarter		Total Profit*	
	Profit	Premium	March Quarter	June Quarter
	£	£	£	£
Amalgamated Banket .....	77,219	9,931	87,150	67,617
Ariston Gold Mines .....	144,411	10,854	155,265	144,166
Bremang Gold .....	21,730	2,698	24,428	75,743
Gold Coast Main Reef .....	36,889	3,541	40,430	37,137
Marlu Gold .....	18,385	4,437	22,732	19,853

\*Including premium revenue.

Factually, the jump in profits of Bremang Gold Dredging by over £30,000, due to the company's No. 4 dredge resuming operations after its general overhaul, was the outstanding feature. But development results achieved by Ariston and G.C. Main Reef were also impressive. Driving north on level 24 Ariston reported values of 6.9 dwt. over 195 in., equivalent to 1,345.5 in.-dwt., and at the end of June the average for this reef was 6.7 dwt. over 113 in. for the total distance of 1,430 ft.

Good development results reported by G.C. Main Reef included 609 in.-dwt. for 55 ft. on level 14 of the Bondaye main shaft section, while 534 in.-dwt. for 155 ft. was disclosed on level 12 in the Tuappim section.

## Rising Costs Cut Profits of Morning Star

Morning Star (G.M.A.) N.L., during the year ended March 31, 1952, expanded its mill throughput by nearly 2,700 tons, but the grade of ore crushed fell by 4.1 dwt. per ton with the result that total gold production contracted by 1,774 oz. compared with the preceding year.

Year to	Milled (tons)	Yield (oz.)	Grade (dwt.)	Cost† A-s	Ore Reserves (tons)
Mar.31	(tons)	(oz.)	(dwt.)	A-s	(tons)
1952	18,600	9,679*	10.4†	123.7	51,000
1951	15,902	11,453‡	14.5	117.1	61,000

\*Excluding 197 tons concentrates assaying 37 dwt. per ton and 230 tons concentrates assaying 4.5 dwt. per ton, recovered and stacked for treatment at a later date. †Excluding concentrates recovered but not treated. ‡Per ton, including development charges. §Including 319 oz. in concentrates.



Moreover, basic wage increases in the State of Victoria during the year amounted to 39s. per week, total power charges were higher and the fact that a substantial part of the development work carried out during the year was of an exploratory nature from which no ore was recovered as a credit, all materially contributed to raising costs by as much as 6s. per ton.

Year to Mar. 31	Gross Revenue	Mining Costs	Tax	Net Profit	Dividend s. d.	Carry Forward
	£A	£A	£A	£A		£A
1952	158,696*	115,484	106	35,654	1 0	60,286
1951	177,038	93,428	125	77,773	1 9	72,255

\*Includes £A4,220 received from Premium Gold Sales made between November 1951 and March 31, 1952.

The impact of these adverse features is clearly reflected in the above table, and accounts for the lowered dividend distribution, which, however, was paid on a capital increased from £A80,000 to £A100,000 in 4s. shares by the issue in September last of 100,000 shares at a price of 10s. per share to shareholders in the ratio of one new for every four held. The £A30,000 premium received was placed to a share premium account.

#### Mount Coolon Pays 6d.

The principal income producing asset of Mount Coolon Gold Mines N.L. is its holding of 102,100 4s. shares of Morning Star (G.M.A.) N.L. Thus the reduction from 1s. 9d. to 1s. in Morning Star's distribution (see elsewhere on this page) caused Mount Coolon's dividend income to contract from £A12,763 to £A5,105.

Year to Dec. 31	Gross Revenue	Expenses	Tax	Net Profit	Dividend	Carry Forward
	£A	£A	£A	£A		£A
1951	5,289	989	25	4,275	6d.	32,916
1950	13,130	766	159	12,205	Nil	44,016

\*Subject to payment to Gold Mines of Australia of management fee of 2½ per cent, on distribution to shareholders.

Nevertheless, the company having passed its dividend in 1950 was able to pay 6d. per 10s. share on its £A300,000 issued capital—albeit at the expense of its carry forward which, at the fiscal year-end, showed a reduction of some £11,000. On the other hand, this was partially offset by the receipt of £A7,445 arising from the sale of its rights to participate in Morning Star's share issue in September, 1951.

Mount Coolon also holds 35,300 shares of 10s. each in Great Western Consolidated N.L.

The annual meeting will be held in Melbourne on September 1. Sir Walter Massy-Greene is chairman.

#### Consolidated Tin Smelters Maintain Dividend

For the year to March 31 last, Consolidated Tin Smelters group trading profits showed an increase of around £150,000 at £1,339,395, a performance which reflects the continued prosperity of the tin mining industry in which this organization plays so great a part. The group's revenue is earned largely from treating tin concentrates on toll, both at the Penang Smelter owned by the subsidiary Eastern Smelting Co. and at the Bootle works of Williams, Harvey & Co., in which it also has a controlling interest. Though the Panang smelter Consolidated Tin handles rather more than half the output of Malayan concentrates, while the Bootle works receives the bulk of the Nigerian and Bolivian ores which come to the United Kingdom. Consolidated Tin also has a substantial interest in the Dutch smelter at Arnhem, which at present takes most of the Indonesian output.

Despite the improvement in group trading profits, taxation was up by £180,000, at £847,873, which included an allowance of £34,250 for E.P.L. during the last three months of the financial year. Consequently the consolidated net profit for the year shows a small decrease at £446,972. The dividend on the ordinary stock has been kept at 12½ per cent, corresponding to the previous year's 10 per cent plus 2½ per cent bonus.

An interesting item in the balance sheet is a secured loan for £150,000 made to Strathmore Consolidated Investments in July of last year. This is fully secured and repayable by July 31, 1956, or later by agreement. While investment in the South African gold mining industry is a new departure for Consolidated Tin this particular asset is not one which should cause any anxiety.

In his statement accompanying the report and accounts the chairman, Mr. E. V. Pearce, commenting on the political situation in Malaya, again draws attention to the damaging effect of the terrorists' campaign on prospecting. He points out that until prospecting operations can be resumed, new areas can neither be proven nor equipped to replace those workings which are approaching exhaustion. "When it is borne in mind," he says, "that virtually no prospecting has been carried out for almost twenty years, it is apparent that, until normal prospecting can be resumed, production in Malaya must show a gradual decline. On the other hand, there are, I think, indications that, on the long term view, consumption will gradually increase and it is on these two factors that I mainly base my opinion that we can look forward to a reasonable price for tin for some time to come."

#### London Tin's Larger Dividend Income

Dividend income of London Tin Corporation during the year ended April 30, 1952, rose by £178,979 to £1,150,994 and was chiefly responsible for the appreciable expansion in the company's gross revenue from £470,298 to £1,234,298, although it should also be stated that profits on investments increased by over £60,000.

Year to April 30	Gross Revenue	Tax and* Expenses	Net Profit	Dividend†	To Reserves	Carry Forward
	£	£	£	%	£	£
1952	1,234,298	817,791	416,507	20	41,500	291,074
1951	994,952	545,326	449,626	18	175,000	257,369

\*Tax £723,070 in 1952 (1951—£470,228).

†Distribution £379,915 in 1952 (1951—£341,924).

Unfortunately, the increased revenue was more than matched by the rise in taxation liabilities from £470,000 to £723,000 so that the net profit for the year actually declined by approximately £33,000 compared with the previous year. It is interesting, if a little sinister, to note that £40,000 of the total tax liability was required to meet the new E.P.L. liability. Shareholders, however, did not suffer, the total distribution of 18 per cent, plus a bonus of 2 per cent, making 20 per cent for the year, comparing with 18 per cent in the previous year, but the allocation to reserves was much lower.

The general tendency in recent months has been towards a decline in tin dividends, the cumulative effects of which, if continued, may well result in the corporation's dividend income showing a decline in the current year. Yet the current quotation for tin is a profitable one and one, moreover, which has shown marked resistance to a fall to lower limits.

The annual meeting will be held in London on September 19. Mr. J. Ivan Spens is chairman.

#### Kinta Kellas Reduces Dividend

Operations of Kinta Kellas Tin Dredging for the year ended March 31 last were on a smaller scale than in the preceding year, the dredge throughput declining by some 181,000 cu. yd. This deficiency was partly offset by a higher yield per cu. yd. but the total production figure showed a modest drop of 12 tons. Costs continued to rise, the increase per ton being recorded at approximately £60, which was not effectively countered by the improved price received per ton of £24.

Year to Mar. 31	Treated cu. yd.	Yield (lb.)	Output (tons)	Per ton Cost	Tin Ore Price	Tin Proceeds
	cu. yd.	(lb.)	(tons)	£	£	£
1952	1,062.1	0.50	237	362	581	137,748
1951	1,243.2	0.45	249	312	557	138,605

The feature of the profit and loss account was the reduction in the tax liability which enabled the net profit to make better reading than in the preceding year, despite the heavier mine expenditure incurred. Although the dividend distribution on the £105,000 issued capital was reduced to 20 per cent against 25 per cent, amounts totalling £11,500 have been allocated for contingency reserve and dredge repairs and renewals, while the sum of £17,500 has been written off the rehabilitation account.

Year to Mar. 31	Gross Revenue	Mine* Costs	Tax	Net Profit	Dividend	Carry Forward
	£	£	£	£	%	£
1952	147,266	98,128	21,035	24,590	20	10,533
1951	144,083	90,039	35,006	16,689	25	10,270

\*Including royalty payments and depreciation.



The company's financial position is sound and current assets are shown in the balance sheet at £123,418 against current liabilities of £59,118. Additionally investments at cost are recorded at £49,347.

The annual meeting will be held in London on September 12. Mr. P. J. Burgess is chairman.

#### Puket Tin's Good Results

Although the operating results achieved during 1951 by Puket Tin Dredging, whose alluvial tin-bearing properties are located at Katu on the Island of Puket (Tongkah) Thailand, showed a big improvement over the 1950 figures, the two year's results do not invite a strict comparison. For the statistics relating to 1950 represent only eight months' operations, the remaining four months of the year being taken up by the dredge crossing a road which bisects the company's property. More than that, the 1950 figures take into account the cost of this move which amounted to £17,870.

Year to Dec. 31	Dredged cu. yd. (000)	Yield per cu. yd. (lb.)	Output tons	Price* per ton £	Tin Sales £	Tribute £
1951	1,673	0.63	469	554	259,688	9,166
1950	1,032	0.75	344	465	160,711	4,761

\*After paying Thai Royalty.

In any event, during 1951 operations proceeded smoothly and apart from the decline in the yield per cu. yd. results were highly satisfactory.

Year to Dec. 31	Gross Revenue £	Mining Costs £	Tax £	Net Profit £	Divi- dend s. d.	Carry Forward £
1951	274,728	101,078	109,094	42,519	1 3	20,028
1950	169,834	57,888	46,672	41,236	9	20,321

The steep advance in gross revenue reflects the larger output and the higher price per ton received. Unfortunately, the rise in revenue was paralleled by increased costs, and after meeting all expenses, including provision for depreciation of £12,297 (nil) and a much heavier tax burden, net profit was reduced to much the same figure as for 1950. However, shareholders received more, the sum of £10,000 (£13,000) was written off property account and the carry forward at the end of the year remained virtually unchanged compared with the preceding year. Output during the first six months of the current year amounted to 237½ tons compared with 255½ tons in the comparable period of the year under review.

The annual meeting will be held in London on September 9. Mr. Gilbert Richard Mitchison is chairman.

#### DIVIDENDS

Amalgamated Anthracite Collieries 1½% (Oct. 1)  
De Beers Cons. Mines 10s. (July 28)  
Dundee Coal 2½% i (September 20)  
English Electric Co. Ord. 5% i (Sept. 15)  
Gopeng Consolidated 12½ i (Sept. 13)  
Gold Coast Main Reef 5% i  
International Nickel Co. of Canada 50c. (Sept. 20)  
Indian Copper Corporation 12½% (Nov. 28)  
Komata Reefs 3d.\* (October 23)  
Lahat Mines 9d. i (July 25)  
Mount Isa Mines 10% i (July 15)  
Malayan Tin Dredging 1s. 6d. i (July 31)  
Mount Morgan 1s. Ord. (Sept. 30)  
Naraguta Extended Areas 3% (Oct. 3)  
Naraguta Karama 5% (Oct. 16)  
North Kalgurli (1912) 37½% (Oct. 2)  
Powell Duffryn 5% (September 30)  
Rhodesian Corporation 5% i (July 21)  
South Bukuru Areas 7% (Oct. 3)  
Southern Malayan Tin Dredging 1s. 6d. i (July 29)  
South Kalgurli Consolidated 15% i (July 31)  
United Tin Areas of Nigeria 6%

i interim

\* Tax free

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## Company Shorts

**Indian Copper's Big Profit Expansion.**—India Copper Corporation, which transferred its seat of control and management to India in April last, has announced a net profit for 1951 of £159,712 against £62,531 in 1950.

This is a sharp rise in profits by any standard of reckoning, but net earnings appear even more impressive when it is realized that this figure was struck after providing £100,000 (£85,000) for depreciation, £445,000 (£347,000) for tax and allocating £175,000 (£30,000) to general reserve, plus £95,651 written off mining development and general expenditure.

The tax-free dividend of 12½ per cent required £114,275 against 12½ per cent, less tax, paid for 1950 which absorbed £59,994. The carry forward at the end of 1951 amounted to £85,540 against £40,103 brought in.

**Nigerian Consolidated Mines.**—Facing the virtual exhaustion of its tin deposits, Nigerian Consolidated Mines sold all its remaining tin mining properties last year, and now has all its assets invested in industrial, mining and finance companies which in the main are established dividend payers. The company still retains part of its shareholding in the Esperanza Copper & Sulphur Co. and also has an interest in the Mines Development Syndicate which is participating with the American Smelting & Refining Co. in the proposed opening up of the lead-zinc areas in Southern Nigeria.

The company's new investment policy resulted during the year to March 31, 1952 in an income from dividends, etc. of £3,852 against virtually no earnings in the previous year. After expenses, profit for the year amounted to £959, and the unappropriated carry forward to £8,057. No dividend is being paid.

**Kalgoorlie Southern's Paid Up Capital.**—In the note on the Western Mining Corporation group in our last week's issue, the issued capital of Kalgoorlie Southern Gold Mines was inadvertently given at £740,900. In fact, the subscribed capital consists of 740,900 5s. shares, 120,000 of which are fully paid, while the remaining 620,900 are paid to 3s., making a total paid up capital of £123,135.

**Komata Reefs.**—Komata Reefs Gold Mining Co. announces a decreased profit after tax for the year to March 31 last, of £1,571 compared with £3,138 in the previous year. The directors are recommending a dividend of 3d. per share, free of tax, compared with 4d. in 1951.

**Northern Transvaal (Messina) Copper on Maintenance Basis.**—The June quarterly report of Northern Transvaal (Messina) Copper Exploration states that the mine has been placed on a maintenance basis.

**Mr. F. A. Bassett** has been appointed a director of the Leonora Corporation Ltd. and at the same time the resignations of **Captain A. H. Moreing** and **Mr. E. A. Loring** have been announced.

**Mr. W. L. Batt**, who is Minister in charge of the M.S.A. Mission to this country, as well as being Minister for Economic Affairs at the U.S. Embassy in London, will be relinquishing his duties here on September 15. It is understood that after leave of absence he will be appointed to another M.S.A. assignment elsewhere.

**Mr. J. H. Harris** has been appointed acting director of the Tanganyika Geological Survey.

**Mr. A. Hedley Williams** has joined the Board, and been elected chairman, of the London, Australian & General Exploration Co.

**Mr. H. A. Mackay** has been appointed a director of "Geoffries" to fill the vacancy created by the death of **Mr. I. Shaffer**.

**Mr. H. F. Oppenheimer** has joined the Board of Stilfontein Gold Mining. His alternate will be **Mr. W. D. Wilson**. This appointment follows the resignation of **Mr. H. N. Hart** and his alternate **Mr. E. A. Wakely-Smith**.

**Mr. D. M. Sheridan** has been transferred from the Johannesburg office of Strathmore Consolidated Investments and has taken up the post of technical manager to their subsidiary, Rhodesian Strathmore Investments.

**Roura & Forgas Ltd.** have moved their premises to Colquhoun House, 27-37 Broadwick Street, London, W.1. Telephone: Gerrard 9641-8.

**Small & Parkes** have announced the opening of a new Don Brake & Clutch Lining depot at 50, Old Market Street (Jacob Street entrance), Bristol. Telephone: 27214.

**Tindals Gold Mines** have announced that their registered office and also the London office of Consolidated Gold Mines of Koolgardie have been transferred to 117 Old Broad Street, London, E.C.2.

## SONS OF GWALIA

The Fifty-fifth Annual General Meeting of Sons of Gwalia Ltd. was held on August 26 in London.

**Captain A. H. Moreing, Assoc.M.Inst.C.E.**, the Chairman, in the course of his speech said: It is a great disappointment that the company incurred a loss for the year 1951. The tonnage of ore mined fell by 18,540 tons and the revenue from gold sold by £81,351. On May 7, 1951, there was a breakage of the crankshaft of the main winding engine. Repairs were completed on May 24 and underground operations resumed. During the period of the shut down, however, men started to drift away and this combined with the inevitable dislocation seriously hampered recovery, and it was not possible to make good the loss during the latter part of the year.

The labour position continued to deteriorate during the first few months of 1952 and in May the number of men underground fell to 95, the lowest figure since the war. The maintenance of an adequate labour force is always difficult on a mine in an out of the way spot, but an improvement has taken place recently and the force is now 138, which figure will, I hope, be maintained and possibly increased.

Inevitably costs have risen, and in 1951 they increased by 10s. 3.1d. per ton, partly accounted for by the fact that the overhead expenses were spread over a smaller tonnage and partly by the continuous increase in wages and industrial allowances.

These increases are automatically related to the cost of living figures, but there are some signs that the inflationary spiral in Australia has been checked. Should this improvement in the labour force be maintained we may hope to see a larger tonnage sent to the mill with a consequent increase in gold won and a fall in the costs per ton which will help to offset the rise in wages.

In 1951 the Australian authorities announced that except for 6,000 oz. per month the Australian gold producers would be allowed to sell their gold in the open market, and an organization called the Gold Producers' Association Ltd. was set up. The first sales were made in November, and our share of the premiums received for the first quarter amounts to £4,736. Since the commencement of the scheme the premiums have shown a tendency to fall, but in respect of this year we should receive an appreciable sum.

The report and accounts were adopted.

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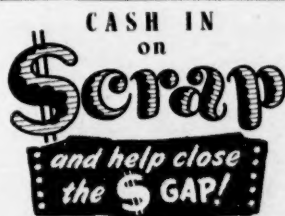
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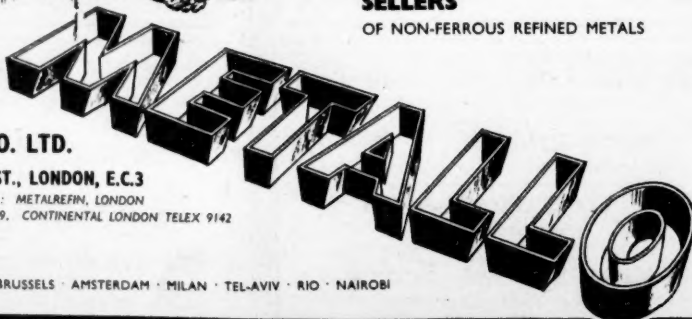
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